BROOKHAVEN NATIONAL LABORATORY

WORK PERMIT # _____

Work Order # _____ Job # _____ Activity # _____

1. Work requester fills out this section

STANDING WORK PERMIT [ ]

Requester: Carter Biggs Date: 3/4/03 Ext. 7515 Dept/Div/Group: Physics

Other Contact person (if different from requester): R. Pisani Ext. 5301

Work Control Coordinator C. Biggs Start Date 3/5/03 Est. End Date 3/5/03

Description of Work / Problem: ~~See Attached Sheet~~

REMOVE SMALL AMOUNT OF ETHYL ALCOHOL IN DC GAS PIPES

Building 1005B Room GMH + TR Equipment DC GAS Service Provider US

2. Work requester, service provider, and ES&H (as necessary) fill out this section or attach analysis

ES&H Analysis

RADIATION CONCERNS [X] NONE [ ] Activation [ ] Airborne [ ] Contamination [ ] Radiation [ ] OTHER _____

[ ] Special nuclear materials involved, notify Isotope Special Materials Group [ ] Fissionable materials involved, notify Laboratory Criticality Officer

SAFETY CONCERNS [ ] NONE

[ ] Adding / Removing Walls or Roofs	[ ] Confined Space*	[ ] Explosives	[ ] Lead*	[ ] Penetrating Fire Wall
[ ] Asbestos*	[ ] Corrosive	[ ] Flammable	[ ] Magnetic Field	[X] Pressurized Systems
[ ] Beryllium*	[ ] Cryogenic	[ ] Fumes/Mist/Dust*	[ ] Material Handling	[ ] Rigging/Critical Lift
[ ] Biohazard*	[ ] Electrical	[ ] Heat/Cold Stress*	[ ] Noise*	[ ] Toxic Materials*
[ ] Chemicals*	[ ] Elevated Work*	[ ] Hydraulic	[ ] Non-ionizing Radiation	[ ] Vacuum
	[ ] Excavation	[ ] Lasers*	[ ] Oxygen Deficiency*	[ ] OTHER _____

*Does this work require medical clearance or surveillance from the Occupational Medicine Clinic? [ ] Yes [ ] No

ENVIRONMENTAL CONCERNS [ ] NONE [ ] Work impacts Environmental Permit No. _____

[ ] Atmospheric Discharges (rad/non-rad)	[ ] Liquid Discharges	[ ] Soil activation/contamination	[ ] Waste - Mixed
[ ] Chemical or Rad Material Storage or Use	[ ] Oil / PCB Management	[ ] Waste - Clean	[ ] Waste - Radioactive
[ ] Cesspools (UIC)	[ ] Protected areas / species	[ ] Waste - Hazardous	[ ] Waste - Regulated Medical
[ ] High water / power consumption	[ ] Spill potential	[ ] Waste - Industrial	[ ] OTHER _____

Waste disposition by: _____

POLLUTION PREVENTION (P2) / WASTE MINIMIZATION OPPORTUNITY: [ ] None [ ] Yes

Facility Concerns

[ ] NONE

[ ] Access/Egress Limitations	[ ] Impacts Facility Use Agreement	[ ] Temperature Change	[ ] OTHER _____
[ ] Configuration Control	[ ] Maintenance Work on Ventilation Systems	[ ] Utility Interruptions	
[ ] Electrical Noise	[ ] Potential to Cause a False Alarm	[ ] Vibrations	

Work Controls

WORK PRACTICES

[ ] NONE	[X] Exhaust Ventilation	[ ] Lockout/Tagout	[ ] Spill Containment
[ ] Back-up Person/Watch	[ ] HP Coverage	[ ] Posting/Warning Signs	[ ] Time Limitation
[ ] Barricades	[ ] IH Survey	[ ] Scaffolding - requires inspection	[ ] Warning alarm (i.e. "high level")

PROTECTIVE EQUIPMENT

[ ] NONE	[ ] Ear Plugs	[ ] Gloves	[ ] Lab Coat	[X] Safety Glasses	
[ ] Coveralls	[ ] Ear Muffs	[ ] Goggles	[ ] Respirator	[ ] Safety Harness	
[ ] Disposable Clothing	[ ] Face Shield	[ ] Hard Hat	[ ] Shoe covers	[ ] Safety Shoes	[ ] OTHER _____

PERMITS REQUIRED (*Please attach*) *Initial next to box to show who has responsibility to generate the permit. Permits must be valid when job is scheduled.*

[X] NONE	[ ] Cutting/Welding	[ ] Impair Fire Protection Systems
[ ] Concrete/Masonry Penetration	[ ] Digging/Core Drilling	[ ] Rad Work Permit - RWP No. _____
[ ] Confined Space Entry	[ ] Electrical Working Hot	[ ] OTHER _____

DOSIMETRY/ MONITORING

[X] NONE	[ ] Heat Stress Monitor	[ ] Real Time Monitor	[ ] TLD	
[ ] Air Effluent	[ ] Noise Survey/Dosimeter	[ ] Self-reading Pencil Dosimeter	[ ] Waste Characterization	
[ ] Ground Water	[ ] O_2/Combustible Gas	[ ] Self-reading Digital Dosimeter	[ ] OTHER _____	
[ ] Liquid Effluent	[ ] Passive Vapor Monitor	[ ] Sorbent Tube/Filter Pump		

Training Requirements (List below any location specific training requirements)

Based on analysis above, the Walkdown Team determines the risk, complexity, and coordination ratings below.

ES&H Risk Level: X LOW ___ MODERATE ___ HIGH

Complexity Level: X LOW ___ MODERATE ___ HIGH

Work Coordination: X LOW ___ MODERATE ___ HIGH

Note: If all the ratings are LOW, the **Work Control Coordinator** and **Service Provider** must sign for concurrence on the back side. Further review of the work permit is **not** required. If any ratings are MODERATE or HIGH, the entire permit must be completed.

3. Both work requester and service provider coordinate on work plan (use attachments for detailed plans)

Work Plan: (procedures, timing, equipment, and personnel availability need to be addressed) See ATTACHED PLAN

Special Working Conditions Required: _____

Operational Limits Imposed: _____

Post Work Testing Required: _____

Job Safety Analysis Required ___ Yes X No Walkdown Required ___ Yes X No

Reviewed By: *Primary Reviewer will determine the size of the review team and the other signatures required based on hazards and job complexity. Primary Reviewer signature means that the hazards and risks that could impact ES&H have been identified and will be controlled according to BNL requirements.*

Title	Name (print)	Signature	Life #	Date
Primary Reviewer				
ES&H Professional				
Other				
Other				
Work Control Coordinator*	~~Bob~~ CARTER BIGGS	Carter Biggs	15639	3/4/03
Service Provider*	CARTER BIGGS	Carter Biggs	15639	3/4/03

Only signatures required for concurrence on LOW rated jobs.

Review done: in series team

4. Job site personnel fills out this section

Note: Signature indicates personnel performing work have read and understand the hazards and permit requirements (including attached permits).

Job Site Supervisor CARTER BIGGS Contractor Supervisor _____

Workers:	Life #	Workers:	Life #
CARTER BIGGS			

Workers are encouraged to provide feedback on ES&H concerns or on ideas for improved job work flow. Use feedback form or space below.

5. Work Requester or designee fills out this section

Conditions are Appropriate to Start Work: (Work permit has been reviewed, work controls are in place, and site is ready for job.)

Name CARTER BIGGS Signature Carter Biggs Life # 15639 Date 3/4/03

6. Work Requester determines if Post Job Review is required ___No ___Yes (Fill in names of reviewers)

Post Job Review:

Name: _____ Signature_____ Life #: _____ Date: _____

Name: _____ Signature_____ Life #: _____ Date: _____

7. Worker provides feedback

Worker Feedback: _____

8. Work Control Coordinator (requesting dept.) checks quality of completed permit and closes out

Closeout: Name _____ Signature_____ Life #: _____ Date: _____

Comments: _____

WORK PLAN FOR PURGING ALCOHOL FROM DC SUPPLY PIPES

1. Disable alarms in DC gas system. Advise shift leader of this to make sure HV to DC is off.
2. By-pass alcohol bubblers in GMH.
3. Purge supply lines from GMH to carriages with 100% argon for 30 minutes (volume in each .5" pipe X 200' is ~250 liters, divided by 12 lpm flow = 20 minutes minimum purge time to carriages).
4. Stop argon flow from DC gas rack.
5. Disconnect DC East gas line in GMH downstream of canary chamber and hook up high pressure dry air supply line.
6. Close SV-18 and SV-20.
7. Disconnect DC supply line where it connects to east carriage. Plug downstream end to prevent contamination to chamber in IR.
8. Connect .5" poly flow line to just disconnected DC supply line in IR and run it to outside the building.
9. Open high pressure (~85 psi) dry air supply in GMH and blow out the alcohol in the east supply pipe for ~ 1 hour. Reconnect DC east supply line from rack and purge pipe with 100% argon for 30 minutes.
10. Reconnect the DC east supply line to the carriage.
11. Repeat steps 4-9 for west DC.
12. Reintroduce 50/50 mix into DC supply at rack.
13. Take alcohol bubbler rack out of by-pass.
14. When system has stabilized, re-enable alarms.

By: Carter Biggs
Phenix Gas Systems
3/3/03